

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference DXM/GJ/Y2973	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2004/003258	International filing date (day/month/year) 26/03/2004	(Earliest) Priority Date (day/month/year) 26/03/2003
Applicant SIGMAKALON SERVICES B.V.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).



With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.



Certain claims were found unsearchable (See Box II).



Unity of invention is lacking (see Box III).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____



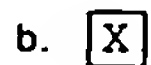
as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.



none of the figures is to be published with the abstract.

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002156224	A1	24-10-2002	AT 240362 T	15-05-2003
			CN 1361219 A	31-07-2002
			DE 60100271 D1	18-06-2003
			DK 1201700 T3	15-09-2003
			EP 1201700 A1	02-05-2002
			ES 2201017 T3	16-03-2004
			JP 2002201280 A	19-07-2002
			NO 20015198 A	26-04-2002
			PT 1201700 T	30-09-2003
			SG 97209 A1	18-07-2003
			JP 2002206069 A	26-07-2002
EP 1260513	A	27-11-2002	EP 1260513 A1	27-11-2002
			WO 02094838 A1	28-11-2002
			EP 1389214 A1	18-02-2004

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/003258

International filing date (day/month/year)
26.03.2004

Priority date (day/month/year)
26.03.2003

International Patent Classification (IPC) or both national classification and IPC
C09D183/10, C08G77/42

Applicant
SIGMAKALON SERVICES B.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C09D183/10 C08G77/42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C09D C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/156224 A1 (TSUBOI MAKOTO ET AL) 24 October 2002 (2002-10-24) claims; examples	1-45
A	EP 1 260 513 A (SIGMA COATINGS BV) 27 November 2002 (2002-11-27) claims; examples	1-45



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

* & * document member of the same patent family

Date of the actual completion of the international search

18 May 2004

Date of mailing of the international search report

28/05/2004

Name and mailing address of the ISA

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Authorized officer

Kolitz, R

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

10/550834

International application No.
PCT/EP2004/003258

JC09 Rec'd PCT/PTO 23 SEP 2005

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/003258

Box No. II Priority

1. ☐ The following document has not been furnished:

☐ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-45
	No: Claims	
Inventive step (IS)	Yes: Claims	1-45
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-45
	No: Claims	

2. Citations and explanations

see separate sheet

Re item V:

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability, Article 33 (2) to (4) PCT; citations and explanations supporting such statement

D1: US2002156224

1. The present invention relates to a **process** for the preparation of polysilylesters comprising structural units of formula (I) as defined in present claim 1 by reacting a polyacid of formula (II) with a polyacyloxysilyl derivative of formula (III), see claims 1-36. [Present claim 36 refers to the examples and figures which is formally not allowable under Rule 6.2 (a) PCT and therefore it is regarded as if it had not been filed].

Present claims 37 and 44 relate to a **film or coating** comprising a polymer obtainable by such a process and present claim 39 and 41-44 to a **film or coating composition** comprising a polysilylester obtainable by such a process.

Present claims 38 and 40 relate to a **polysilylester** comprising the structural unit of formula (I) as defined in present claim 1.

Present claim 45 relates to an **implantable medical und /or veterinary device** having a coating or comprising a coating composition according to claims 39, 41 and 43.

2. The present application meets the requirements of Article 33 (2) PCT because the subject-matter of claims 1-43 is novel.
None of the documents of the prior art discloses a **process** for the preparation of polysilylesters comprising a structural unit of formula (I) as defined in present claim 1 or a **film or coating** comprising a polymer(polysilylester) obtainable by such a process or a **film or coating composition** comprising it or the polysilylester as such as defined in present claims 37,44 / 39,41-44 / 38 and 40 or an **implantable medical und /or veterinary device** having a coating or comprising a coating composition comprising it as defined in claim 45.

The subject-matter of claims 1-45 is therefore novel.

3. The present application meets also the requirements of Article 33 (3) PCT because the subject-matter of claims 1-45 is inventive.

D1 is considered to represent the closest prior art since it discloses silylester copolymers. The silylester copolymers of D1 do not exhibit structural units of formula (I) as defined in present claim 1 and they are not produced by reacting a polyacid of formula (II) with a polyacyloxysilyl derivative of formula (III), see present claims 1-36.

The problem underlying the present application may be regarded as to provide a further silylester copolymer for metal free antifouling coatings and a process or the preparation thereof.

No indication is given in the prior art that the specific polysilylesters comprising structural units of formula (I) as defined in present claim 1 or coatings or coating compositions thereof, the specific polysilylesters being obtainable by reacting a polyacid of formula (II) with a polyacyloxysilyl derivative of formula (III), as defined in claims 1-45 can be used to solve this problem.

Therefore the presence of an inventive step can be acknowledged for the subject-matter of claims 1-45 vis-à-vis the documents of the search report.

4. The present application meets the requirements of Article 33 (4) PCT because the subject-matter of claims 1-45 is also industrially applicable.